value of about $N_B W_{pp}$ gradually with increasing of a distance to said first semiconductor region, said third semiconductor region being depleted under a reverse voltage close to a breakdown voltage applied to a junction formed by said first and second semiconductor regions, where N_B is the doping density of said second semiconductor region, and where W_{pp} is the depletion width of an abrupt parallel plane junction made by said second semiconductor region, and where said average doping density of the second conductivity type of said third region refers to the average density of effectively ionized impurities of the second conductivity type in a surface area having a lateral dimension smaller than W_{pp}.

2. The surface voltage sustaining structure of claim 1 wherein the average doping density of the second conductivity type of the third semiconductor region is achieved by local compensation of the impurities of the first conductivity type to the impurities of the second conductivity type, where the bottom of said third semiconductor region is of the second conductivity type, and the average density of the effective ionized impurities of the second conductivity type refers to the average density of ionized impurities of the second conductivity type in the one or more regions of the second conductivity type minus the average density of the ionized impurities of the first conductivity type in one or more regions of the first conductivity type in said surface area.

3. The surface voltage sustaining structure of claim 2 wherein a region having a uniform doping density of the second conductivity type is used and the region of the first conductivity type for compensation has a plurality of continuous zones with a doping density of the impurities of the first conductivity type increasing zone by zone with the increasing of the distance to said first semiconductor region of a second conductivity type.

4. The surface voltage sustaining structure of claim 3 wherein at least one zone in the region of the first conductivity type for compensation is replaced by a plurality of separate zones of the first conductivity type that are smaller than such at least one zone.

5. The surface voltage sustaining structure of claim 2 wherein a region of the first conductivity type with sawtooth-like area for compensation is on top of the region with uniform density of the impurity of the second conductivity type.

6. The surface voltage sustaining structure of claim 2 wherein at least two separate layers of the first conductivity type with different lengths are inserted inside the region of the second conductivity type.

7. The surface voltage sustaining structure of claim 2 wherein said substrate of the first conductivity type is separated from said heavily doped region of the second conductivity type and the surface voltage sustaining structure by an insulator region, but said substrate is electrically connected to the ends of said surface voltage sustaining region.

8. The surface voltage sustaining structure of claim 1 wherein said structure comprises a plurality of small zones of the second conductivity type with a same doping density, which are separated from each other.

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